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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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CANINE AND FELINE TUBERCULOSIS.

In a clinical report last week, Mr. Wallis Hoare raised a very important question, viz., what is the frequence of tuberculosis in dogs? Mr. Hoare evidently inclines to the view that it is much more common than is generally supposed. Certainly the frequence of tuberculosis both in the dog and the cat deserves some enquiry.

All veterinary surgeons agree that canine and feline tuberculosis are not rare; but probably few regard either as very common. Yet there are good reasons for suspecting that their frequence is underestimated. Pet dogs and cats are exposed to the same sources of infection as human beings, and are often in close contact with tuberculous human beings—to whose agency, indeed, the bulk of canine and feline tuberculosis is generally attributed. Raw milk is often habitually given to pet dogs, and constantly to cats. Again, the symptoms of canine and feline tuberculosis are often more or less vague and uncertain, and in many cases which are recognised as tuberculous upon post-mortem examination, the real nature of the disease has been more surmised—as in the case reported by Mr. Hoare—than confidently diagnosed during life. Mr. Hoare justly points out the comparatively small number of dogs subjected to post-mortem examination. The same remark applies even more forcibly to cats; and we may add that very many dogs, and certainly most cats, are never treated by veterinary surgeons at all. Taking into consideration the known susceptibility and frequent exposure to infection of dogs and cats, the difficulties of clinical diagnosis, the comparative rarity of post-mortem examination, and the much greater rarity of microscopical examination, there certainly seems good ground for the suspicion that many tuberculous dogs and cats exist.

From such statistics as are available, it would appear that the percentage of canine and feline tuberculosis varies greatly in different countries and cities. It is quite certain that the subject has not received the full attention it deserves from veterinary surgeons generally. If tuberculosis is common in dogs and cats, it follows that we must often fail to diagnose it. Each such failure means that human beings are allowed to remain in contact—often in extremely close contact—with a tuberculous animal.

TESTIMONIAL TO PRINCIPAL DEWAR.

It will have been noticed that a testimonial to Prof. Dewar on his retiring from the Principalship of the Royal Dick College is to be presented. It is proposed to limit subscriptions to the graduates and students of the Edinburgh College. This is not unnatural on the part of those who are indebted to the Principal for able and zealous teaching, they may well show their gratitude. But it seems a pity that other members of the profession are not invited to join in honouring a man whose life-work has left a distinct mark on veterinary science. Is it too late to admit members who did not study at Dick's? It would be gratifying to many to be allowed to join even at the last moment.

TEMPERATURE IN QUARTER EVIL.

Noticing that the question concerning the temperature registered in quarter evil gave rise to a certain amount of controversy in your journal some time ago, I interested myself in it, and found myself in a position to obtain a little information on the subject.

A circular letter was issued to Stock Inspectors in the vicinity to, whenever they came across an animal suffering from this affection, temperature it and make a smear either of blood from the affected site, or from the most easily accessible lymphatic gland near the group of muscles attacked.

In all cases which I record below I made the diagnosis microscopically, this was necessary as quarter evil is frequently confounded by laymen with snake bites, and the cutaneous form of anthrax.

	Subject.	Part affected.	Temp.
1.	3 year old ox	right scapular	102 F.
2.	2 „ „ heifer	both scapulars	104·1
3.	4 „ „ cow	hind quarters	102.
4.	Yearling	left scapular	103.
5.	10 months calf	right axilla	104·5
6.	Aged ox	not stated	104.
7.	Aged ox	right scapular	103·4

The temperature in case 5 was taken one and a half hours after the calf was first noticed lame. Cases 1 and 3 were *in extremis* and unable to rise. I have no information as to the number of hours cases 2 and 4 were suffering. Ox number 6 was lame, ox number 7 was down and unable to rise.

Mr. Chambers, M.R.C.V.S., informs me he has met with two cases recently. One was a two year old black ox with a large emphysematous swelling on the shoulder, temperature 105. This case was far advanced. Smears from the part revealed the presence of quarter evil bacilli. The other case was

that of a seven months old heifer calf which had a swelling in front of the scapula and was very lame on the right front leg, its temperature registered 106·2.

From the above records I think the conclusion that there is a condition of hyperthermia in quarter evil can be drawn.

The age at which cattle become affected is of interest. Traders and natives inform me that not so many years ago quarter evil was essentially a disease of young stock, at the present time about thirty to forty per cent. of deaths occur in animals over two years of age, even aged transport oxen contract the disease and succumb. This points to animals as they advance in age failing to acquire immunity, or to an increase in virulence of the organism.

R. Percy Jones.

Umtata, Tembuland, Cape Colony.

STRANGLES (?) IN THE DOG.

The above term is obviously incorrect, but I am employing it to describe an affection in dogs because I am unaware of a more suitable term.

The affection is characterised by the presence of a large swelling in the region of the parotid gland, or of the pharynx, or of the intermaxillary space, or in the upper region of the neck, occasionally on the forehead and in the orbital region. After a variable period suppuration occurs and a large abscess results. The pus is frequently thin and sanious; occasionally it is creamy in character and at times it may be fœtid.

The disease seems to occur more frequently in bull dogs and pugs, but it may be met with in all breeds. Young animals furnish the largest number of cases. In some instances the disease seems to be infectious and a number of cases occur in the same kennel.

The swelling in many instances comes on rather quickly, but the suppurative process is often delayed and the pus may be very deep-seated. In some cases, especially in foxhounds, the swelling may involve the entire head, lips, eyelids, nostrils, etc. Metastatic abscesses occur in some cases, and I met with one instance in which suppurative anthritis of the stifle joint resulted as a sequel to the disease. Opthalmic lesions may be observed on other occasions resembling those met with in strangles. Nasal catarrh may also accompany the condition, but this is not a constant symptom.

Is the affection to be regarded as one of the types of canine distemper? I believe that some of the ancient writers described it as such.

It certainly cannot be regarded as having any connection with the disease in man known as epidemic parotitis (mumps), as in the latter "suppuration of the gland is an extremely rare complication," (Osler's "Practice of Medicine.") Cadéac states that infectious parotitis is a very rare affection in the dog, also that suppuration is absent.

Under the heading of "Phlegmonous Pharyngitis" he describes an affection which closely resembles the one I am discussing, with the exception that pharyngitis does not appear to accompany the latter, or at least I always attributed the difficulty in swallowing to mechanical pressure of the abscess. Cadéac gives a photograph of a typical case, which would also represent the disease I have mentioned. He states "it is generally a manifestation of distemper, and is principally seen in animals from one to two months old."

Friedberger and Fröhner mention "Strangles of dogs," as "an original infective disease which is independent of distemper and pyæmia." As, however, the term "strangles" in the present day is becoming a very indefinite one, a more suitable name for the canine affection is desirable.

I should be very pleased if those who take an interest in canine medicine would give their views and experience on the disease I have mentioned, as I am anxious to have some definite information on the subject in order to include it in a "System of Veterinary Medicine" which I am editing and hope to publish before long.

E. Wallis Hoare, F.R.C.V.S.

A MELANOTIC CARCASE.

On the 20th January, 1910, my attention was called to the carcase of a cow that had been detained for inspection: it was that of a well nourished red and white cow reared in the vicinity of Norfolk.

The lungs were studded all through their parenchyma with large blackish blue areas. On section these areas were found to be as solid as normal lung tissue, and when pressed black granular matter adhered to the fingers. The appearance of the lungs reminded one strongly of the Rob Roy Tartan.

The liver showed numerous black areas in Glisson's capsule, but on section no abnormal pigmentation, could be detected with the naked eye.

The subcutaneous fibrous and connective tissues of the back were infiltrated with black pigment and the spinal cord, or as butchers call it, "the pith," was as black as ink throughout its entire length.

No colouration was observed in the kidneys, but the tissue between the kidney and the fat was blackish.

The pleura and peritoneum were covered with black streaks. All the lymphatic glands usually examined were found affected, and as pigmentation is so often met with where there is no generalised melanosis one is inclined to consider it a normal appearance.

The carcase was passed, and on asking the butcher if he had received any complaints from his customers he replied in the negative.

Remarks.—Melanosis is frequently encountered by meat inspectors, but it is seldom distributed to any extent in a carcase. One very often sees the spinal cord affected about the lumbar region. In the lungs of calves it is very prevalent and its infrequent appearance in the lungs of older animals points to the fact that the pigmentation disappears with age.

I should like to know from practitioners who have used Trypanblau in the treatment of redwater, if this substance has any effect in producing colouration in carcases.

W. J. YOUNG, M.R.C.V.S. D.V.S.M. (VICT.)

Sheffield.

SALOFORM PESSARIES.

I have used the Saloform Pessaries, supplied by Messrs. Harkness, Beaumont and Co., of Edinburgh, with good results in various diseases of the genital organs, both in mares and cows, more especially after parturition. They are particularly useful in retention of the afterbirth, with septic complications. It is often impossible to attend more than once a day to irrigate the uterus; in such cases it is good practice to leave one or two of the "extra strong" pessaries *in situ*. I have found them an excellent substitute for iodoform and other well known non-irritating antiseptics. I feel justified in recommending them to the profession.

AINSWORTH WILSON, F.R.C.V.S.

Witham, Essex.

ABSTRACTS FROM FOREIGN JOURNALS.

TRYPANOSOMATA IN SOUTH AMERICAN CATTLE.

Otto Peter, while in the service of Liebig's Meat Extract Co. in Fray Bentos, Urugay, was able to ascertain that trypanosomes exist in cattle in South America. He now records (*Archiv. fur Schiffs und Tropen hygiene*) his observations. In seven naturally infected cattle from the provinces of Rio Negro, Paysandu, and Salto, trypanosomes were present in extremely small numbers, while in some inoculated cattle they were somewhat more abundant. In some cases a mixed infection of trypanosomes and piroplasma bigeminum existed. Peter gives some description of these South American trypanosomes, which belong morphologically to the type of *Trypanosoma theileri*.

The method of natural infection is still unknown. Experimentally it was found that transmission was easy to grown cattle, but more difficult in the case of calves. On the other hand, horses, dogs, sheep, goats, wild rats, guinea pigs, rabbits, and white mice are resistant.

The incubation period in cases of artificial infection was from 9 to 16 days. The trypanosomes were demonstrable for 10 to 12 days in the blood; and the blood remained infectious for at least 11 months. The pathogenic properties of the trypanosome are not yet satisfactorily settled; but the author has observed inflammatory changes in the spleen, liver, and lymphatic glands, which suggest that the organisms are not without pathological importance.—*Berl. Tier. Woch.*

A PECULIAR CASE OF MILK FEVER.

Schaffer records (*Münch. Tier, Woch.*) the case of a cow which, four hours after parturition, became affected with milk fever. Schaffer treated her by an udder infusion of potassium iodide and air, and she apparently recovered. About twenty-four hours later a relapse occurred, which was subdued by the same therapeutic measure. The improvement was maintained till the third day; and then the animal became affected once more. The same treatment —potassium iodide and air—again caused recovery; but this recovery was only apparent, for after a few hours the paresis again set in. On the fourth day Schaffer adopted the infusion of air alone; and removed the paralytic symptoms. On the fifth day of the illness, yet another relapse appeared; and this also was brought to an end by the infusion of air. At nine o'clock that night the cow got up, and gave the impression of liveliness and health. Towards eleven o'clock, however, she suddenly began to falter and fell to the ground; and it was then decided to slaughter her.—(*Berl. Tier. Woch.*)

PARALYSIS OF THE RUMEN IN CONSEQUENCE OF A FOREIGN BODY.

Liebert, of Hanover, records the case of a heifer about a year old, which was suffering from gastric disturbance. The appetite was greatly diminished. The sounds of the rumen were slight at the first examination, and no sounds were ascertainable the next day. The rumen itself was about three-quarters full of firm masses of food. Occasionally tympany was observed, and rumination was suppressed. Throughout the extent of the gastric divisions, no especially sensitive region could be discovered by palpation. Liebert diagnosed paresis of the rumen; and although the presence of a foreign body could not be excluded from the possibilities of the case, yet no clear indication of this was present.

The heifer was put under treatment; and in addition to a low diet, Liebert used different drugs, such as acid hydrochloric, natr. sulfur., natr. bicarbon., rhyzoma veratri pulv., antim. tartr., and aloes, first in small and then in stronger doses. No improvement appeared during a week's treatment. The owner now asked for a more powerful drug to be used; and Liebert dispensed Tinct. veratri to be given in tablespoonful doses.

Soon afterwards, an urgent message was sent to the effect that, shortly after the administration of the first dose of this, the heifer had fallen down groaning, and had vomited material in a stream as thick as a man's arm.

On arrival, Liebert found her standing. The left flank was considerably fallen in, the pulse was quickened, but the general condition did not appear bad. The crib and manger were covered over and over with thin pulpy, unpleasant smelling gastric contents. The contents of the stomach appeared to have been vomited under strong pressure.

From this moment a surprising improvement appeared in the patient. The appetite reappeared the next day, and rumination quickly became re-established.

About five weeks later the owner noticed a swelling upon the animal's left thoracic wall, close behind the elbow-joint. He believed this to be due to a blow from the horn of the neighbouring cow, and consulted Liebert regarding it.

Liebert found that the swelling was as large as a hen's egg, roundish, and fluctuating. He took it for an abscess, and opened it by a weak lantern light. He found the wall of the abscess was covered with granulation tissue, and dimished inwardly, giving the cavity a crater-like formation.

The next day he again explored the cavity, and pushed his finger deeply between the walls, which were covered with flaccid bluish-red granulation tissue. Suddenly he felt a sharp pain at the fingertip, which of course caused him to search for a foreign body. With some difficulty he succeeded in extracting a hatpin about 8 4-5th inches long, with a glass head, and of a pattern frequently used in the district.

Liebert feared that a gastric fistula would result, but this did not occur. Under ordinary treatment (irrigation once or twice daily with a weak disinfectant solution) the wound healed completely; and the heifer afterwards developed into a good milch cow.

Attributing the previous paresis of the rumen to the presence of this foreign body, Liebert quotes the case against a therapeutical opinion emitted by Halterbach. This author recommends a combination of veratrium sulphuricum and arecolin hydrobromicum (*a.a.* grs. 1½) to be given when a foreign body is suspected but not demonstratable. He thinks that if improvement takes place within a week of this medication a foreign body may confidently be excluded. Liebert points out that, had he used this combination in the above case, the result would probably have been that which followed the agent he did use, viz., relief of the gastric disturbance. In that case a foreign body would have been excluded from the diagnosis, and an error in diagnosis have been committed.—*Deutsche Tier. Woch.*

The Treatment of Milk Fever by Adrenalin and Suprarenin.

Prof. Uebele, of Stuttgart, regarding milk fever as solely due to a vaso-motor collapse, has suggested the employment of Adrenalin injections in its treatment. Metzger, of Säckingen, has therefore tried adrenal preparations in three cases—being the only ones he has seen since hearing Uebele's suggestion—and now reports the results.

The first two cases were very severely affected fat cows. Both these lay flat upon the side, and showed fall of temperature, rattling and irregular breathing, and absence of the conjunctival reaction. Metzger gave each case a subcutaneous injection of 5 c.c. of the 1 pro mill. adrenalin solution, but was induced by the gravity of the cases and the severe symptoms of collapse to adopt air infusion in both cases simultaneously with the adrenalin injection.

Both cases, however, got up surprisingly quickly—much more quickly than Metzger has been accustomed to see after air-infusion alone. Both showed a rise of the rectal temperature 10 or 15 minutes after commencing the treatment. One cow stood up after half an hour without assistance; while the other assumed the normal recumbent position, with her head raised, after half an hour, and stood up after an hour.

The third cow, when seen, was in the typical recumbent position, with the head laid back to the side. The conjunctival reaction was still present to some degree. The rectal temperature was 99·5 F. This cow received *no* infusion of air, but an injection of 5 c.c. of the 1 pro mill. solution suprarenini hydrochloric. synthetic. was given subcutaneously. After a quarter of an hour the head, which previously, after being lifted up, had fallen helplessly back on to the ground, could be "carried" to some extent. Acting upon a previous opinion of Uebele's that the dose might eventually be doubled, Metzger now injected another 5 c.c. of the suprarenin solution. Substantial improvement now appeared very quickly, and after another half hour the cow stood up and looked for food.

In all three cases the cows were also rubbed down and covered with woollen rugs.

Metzger regards these three cases as highly encouraging; and in view of the greater simplicity of this treatment, and the possibility of obtaining even more rapid and certain results from it than from infusion of the udder, he recommends it for further trial by practitioners.

He concludes by asking that the results of such trial should either be published or sent direct to Prof. Uebele.—*Berliner Tier. Woch.*

W. R. C.

HEREDITY.

By Thomas H. Dale, m.r.c.v.s.,
Government Veterinary Surgeon, Potchefstroom.

(Concluded from p. 698.)

Prepotency.

The term prepotency expresses the power of a sire or dam to stamp its image on the offspring, type, colour, or may be a peculiarity or variation from the usual standard. A high degree of prepotencey is oftenest found in breeds of ancient lineage, or amongst members of a strain which is very much inbred, which probably amounts to the same thing. There can be no doubt that the majority of wild animals are very much inbred, and in consequence have acquired a high degree of prepotency by fixing the character of a particular type or variety and at the same time, by the elimination of crossing, checking the tendency to revert to some remote ancestral form.

Prepotency, however, is a purely relative term; for instance, a well-bred bull may be prepotent to the majority of the herd, but a certain cow, possibly more inbred, may throw a calf which proclaims the fact that in this case prepotence is carried by the other sex. Again, a bull which has not distinguished himself by stamping his image on calves from pure bred cows of his own breed may, and often does, gain a well-merited reputation for prepotency when mated with half-bred or nondescript cows. In fact when a pure-bred bull of any breed is mated to a mixed herd of cows it is the exception if the bull does not show himself markedly prepotent, and many farmers are of opinion that it is the sire which is always prepotent. But a more likely explanation is that the male is of purer breed and also possibly inbred. Of course if two pure-breeds of equally ancient lineage are crossed neither sex or breed may show marked prepotency over the other. A blend of the different characters may take place, or, again, some character may be prepotent in the one sex and another in the opposite one.

From the foregoing remarks it will be seen how very important it is to use only a pure-bred sire. The longer the breed has been established the more likely is the individual to reproduce the characters and points desired, for the prepotence is not a question of the individual only; it is equally one of race, and this is also an explanation of the fact that an indifferent thoroughbred horse will invariably get better stock than a much better animal of no pedigree. Galton is of opinion that "high prepotency does not arise through normal variation, but must rank as a heritable sport of aberrant variation." There is no doubt that a sport may be prepotent, or possibly, to speak more correctly, may be dominant, but dominance is not a sport, as we shall see later under "mendelism," but a factor which entert into all and every genetic problem where two cells combine. Another belief which obtains very largely amongst stock breeders and farmers is that the shape, colour, and external characteristics are derived from the sire and that the internal organs, constitution, and temperament are received from the dam, but in the light of what has already been said this of course will not bear examination. More than forty years ago Darwin recognised that "the subject of prepotency is extremely intricate"; it still remains so, although much that was then obscure is now revealed to us.

Reversion.

The terms reversion and atavism have been used in a different sense by several biologists and experimenters. Karl Pearson, for instance, defines reversion as "the full reappearance in an individual of a character which is recorded to have occurred in a definite ancestor of the same race," and atavism as "a return of an individual to a character not typical of the race at all, but found in allied races supposed to be related to the evolutionary ancestry of the given race." Others, again, appear to have made use of the same terms in the converse way. In this paper, therefore, the terms will be regarded as synonymous, and agreeing more with Weissmann's definition: "By the term reversion is meant the appearance of characteristics which existed in the more remote ancestors, but were absent in the immediate ancestors, *i.e.*, the parents." In spite, however, of this definition, which appears to be unambiguous, the term has been used in a very loose manner, and made to include phenomena and results which are very misleading. In fact Bateson, in "Materials for the Study of Variation," observes: "Around the term reversion a singular set of false ideas have gathered themselves. It would probably help the science of biology if the word "reversion" and the ideas it denotes were wholly dropped: at all events until variation has been studied much more fully than it has yet been." But that reversion does occur there can be no manner of doubt. The dorsal stripe of dun horses, the bars or stripes in the vicinity of the knees and hocks, and similar phenomena may be taken as examples. Cultivated flowers again often revert to the original wild ancestor. The nectarine which was originally a sport from the peach—in fact is a smooth skinned peach—often reverts to the original peach or, at any rate, so resembles it that it is difficult for even an expert to point out the difference. But to suggest, for instance, that a hare lip in man is a reversion to some ancestral type is clearly a wrong interpretation, the explanation being that it is a clear case of arrested development due to the fact that at a certain period of fœtal life the nostrils communicate with the outer corners of the mouth. Should this communication, which normally closes, persist, or become only partially obliterated, we have an abnormality which is perfectly normal in other species. Under this heading can also be included those ancient relics known as vestigial structures, for although they are not the result of the arrested development of an organ which would be normal at the present stage of our existence, their *occurrence* is still normal. They are *always* found; in fact it is only when their development is not arrested in the usual way that they become abnormal. Much experimentation in connection with the problem of reversion has taken place, but the different interpretations extracted from these results give one pause, and force one to the conclusion that we are in practically the same position as before. As an illustration, Cossar Ewart crossed a tabby coloured Persian cat with a white male of the same breed, the result being two tabby and two white kittens. The two white kittens when mature, being male and female, were mated, and produced four kittens; two pure white like the sire and grandsire, and two tabby coloured like their grandmother. Ewart claims this as an instance of reversion, but Thomson, commenting on this experiment, remarks: "There appear to be many similar phenomena, and it seems in no way advantageous to apply the term "reversion" to what is merely a reassertion of grandparental characters." Again, Cossar Ewart, in summing up the results of his Penicuik experiments, says: "I think it must be admitted the pigeon and rabbit experiments go a long way towards proving the fact of reversion, and the more I contemplate my zebra hybrids the more convinced I am that they are neither new creations, in the strict sense of the term, nor yet intermediate forms; and if they are neither one nor the other, they must be more or less accurate restorations of their comparatively remote ancestors." But the Dutch botanist, De Vries, draws a very sharp line between "true reversion" and what he calls "false atavism or vicinism," which is due to crossing; and concludes that true atavism or reversion caused by an innate latent tendency seems to be very rare. There can be no doubt that crossing does cause the expression of characters which may have lain dormant for generations. It may not be true reversion; it may be that these cases of so-called false reversion or vicinism are really normal Mendelian phenomena, which require further elucidation.

Mendelism.

Just ten years ago the rediscovery of Mendel's epoch-marking treatise gave an enormous fillip to the study of genetics. Several biologists of repute were able to confirm Mendel's conclusions, and it was quickly recognised, as Prof. Bateson says, that "the experiments which led to this advance of knowledge are worthy to rank with those that laid the foundation of the atomic theory of chemistry."

Since the publication of Darwin's "Variation of Animals and Plants under Domestication" in 1868, very little had been done to further the elucidation of the great problem of heredity, a large majority of essayists and investigators being content to rearrange the same facts without adding anything fresh. There can be little doubt that had Mendel's great discovery (first published in 1865) come under Darwin's notice, many of the conclusions set forth by that master, in his work already referred to, would have been modified in many instances; and it can be but a matter for regret that such a mind missed the opportunity of working along a new line of thought, which in his case might have led to infinite possibilities. What then is Mendelism? What is this great law which put new life into a wilted branch of research? "Mendel states that, like other investigators, he had been struck by the regularity with which offspring of certain hybrids reproduce the pure ancestral forms. But owing, as he supposes, to the complex nature of the cases studied, and to want of accurate statistics, the precise facts had never been ascertained. Accordingly he set himself to work out some cases from which every confusing element should as far as possible be excluded." (Report 1 to Evolution Committee, 1902.) After a considerable number of preliminary experiments,

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he decided that the ordinary edible garden pea was best suited to his purpose; for one thing, under ordinary conditions, it is self-fertilizing, the peculiar structure of the flower protecting it from cross-fertilization by insects. Other reasons which urged its suitability were found in the fact that in its several varieties characters differing markedly could be easily seen and distinguished. Some varieties are tall, others of dwarf habit; some varieties when ripe produce green seeds, others again a yellow seed; some have a wrinkled pea, others a smooth one, and so forth. Carrying this observation to its obvious conclusion, he crossed a tall variety with a dwarf, a wrinkled variety with a smooth, and so on. In the case of the first cross mentioned the seeds thus produced grew into plants which were always tall, and in the second case all the seeds produced were round and smooth. It was therefore found in the case of each pair of characters that in the first cross only one appears. Mendel called this a dominant character, and the other which disappears in the first generation he called *recessive*. To simplify matters we will take the case of the tall and dwarf characters only. The seeds produced, as the result of the crossing of the tall and dwarf varieties were planted and, as already stated, produced plants apparently differing in no respect from the original tall parent. The flowers of these were self-fertilized and produced seeds; this is the second generation. When grown up they proved to be mixed, some being tall, others of dwarf habit; in fact some were like the tall grandparent, others like the dwarf grandparent. But it was found that the talls ("dominants") numbered roughly 75 per cent. of the total number, whilst the dwarfs ("recessives") only numbered 25 per cent. It was also found that the plants were either tall or dwarf; there were none intermediate in height, neither did it make any difference which was the pollen-bearing parent; either cross gave an identical result.

The following year enabled Mendel to make another important discovery. It was found that when the seeds of the dwarfs (the recessives) were sown, they produced nothing but dwarfs; in other words the recessives bred true to type and character, this also applying to each succeeding generation, for, although the recessives which appeared in the second generation are the result of a cross, in which "tallness" is the dominant factor, the succeeding generations for all time breed true to the recessive dwarf character. From this it will be seen that some desirable feature or point which it is desired to retain may disappear and appear to be lost in the first generation, reappearing again in the second, indelibly stamped there for ever as a permanent and ever recurring characteristic. This is a most important fact to remember. Many a one has desired to perpetuate some "variation" which has spontaneously appeared in his garden; seed has been saved, and after sowing, the result has been anxiously awaited, disappointment in many cases following, owing to the fact that the much desired feature was recessive in character, and was therefore suppressed in the first generation. But it is equally certain that it would have reappeared in the next, had the seed again been saved, and that the desired character would have been established. We must now turn to the dominants of the first generation and see how they behave. Mendel found, on allowing these to fertilize themselves, that all dominants are not pure as are the recessives. He found that, though *apparently* pure, they are not *actually* so as are the recessives; one-third only of the dominants bred true to tallness, the other two-thirds produced seed from which sprang talls and dwarfs in the proportion 3 : 1. The tall plants then of the second generation were of two kinds—those which were pure for tallness and those which carried the factor for both the tall and the dwarf. And it has been found that in subsequent generations the pure dominants and the pure recessives always breed true, and that the impure dominants throw dominants and recessives in the proportion 3 : 1. The whole of the second generation then consists of three kinds of plants—pure dominants, impure dominants, and recessives in the proportion 1 : 2 : 1. So far all appears plain-sailing; unfortunately other elements enter of a more or less complicated nature, the majority of which it will be impossible to describe or discuss in this article. As an illustration, however, the case of the so-called Andalusian fowl may be cited. It is found that when a white fowl and a black fowl are mated that they occasionally produce a blue. This, however, is not an Andalusian as known to poultry fanciers, although this breed was in all probability produced in a similar manner. The Andalusian fowl is a black-laced bird, having a blue ground, whereas the blue resulting from a black and white first cross is a pale blue, lavender, or French grey without lacing. Various experimenters have found that when these blues or the so-called pure Andalusian are mated together the resultant offspring are whites, blues, and blacks, in the proportion 1 : 2 : 1; that is 25 per cent. white, 50 per cent. blue, and 25 per cent. black. Further, it has been found that the blacks when interbred breed true, as do the whites or splashed whites, again, a black mated with this cross, or *vice versa*, always produces a blue, although the first and original cross which produced the original blue only very occasionally does so. The blues of this next generation, if mated together, again split up as before into the old formula of one white, two blue, and one black, and this goes on for generation after generation. Some seven years ago the writer started with the intention of establishing a blue breed of poultry, but has, for a time at least, abandoned it, as each succeeding year only confirmed the conclusions of other experimenters. Certain it is that the sixth and last generation were a better and more decided blue than the first generation, but equally certain is it that the proportions remained the same. There were no more blues than in the first filial generation. The blacks and whites mated together produced all blues, and the blues split up, as they did in the earlier generations, into the expected proportion of 25 per cent. white, 50 per cent. blue, and 25 per cent. black; so that it appears to be impossible to establish a blue breed on these lines. Therefore it will be seen that, although this is claimed to be a Mendelian phenomenon, in this instance colour does not conform to the usual Mendelian law of dominance. It may be as well to state that blue in this case can hardly claim to be a true colour; it is really a blend of black and white, or possibly, to speak more correctly, a dilute black, but why it does not breed true when once blended, as it does in the case of the mulatto, requires further experiment and elucidation. This again is another illustration of an instance which does not conform to Mendel's law; the child of a white and a black is a mulatto, and these intermarrying breed true. There is no splitting up of colour. As Thomson says: "It is a clear case of blended inheritance and of blended inheritance remaining stable. There is not the least hint of Mendelian inheritance." The same author quotes another instance where Border Leicester rams mated with Cheviot ewes produce half-bred lambs, and these when mated with each other continue in successive generations to breed true to their own type with very little (if any) tendency toward either of the two parent breeds; and it will be possible to give many instances of this nature. At one time it almost appeared that the breeding of high-class stock would become more or less a question of formulæ. That Mendelism will be of great assistance to us there cannot be the shadow of doubt, but that we shall be able to breed winners to order is to expect too much. In this connection Professor Bateson observes: "To avoid raising false expectations it should also be said

that many of the small fancy points which distinguish individuals of the same breed from each other are rather of the nature of fluctuations than definite transmissible attributes. In the regulation of these finer details it is improbable that heredity plays any very prominent or at least assignable part." There is no doubt that this is so, for except in the making and establishing of new breeds it shall help the fancier or breeder little to know that rose comb is dominant to single comb, or that a polled head is dominant to a horned one. The details which play so prominent a part in the show ring or pen are of too fine a nature to be arrived at by so precise a method. If it could be found that the standard of perfection is dominant or recessive, then indeed would the worries of the fancier be at an end, but unfortunately such is not the case; in fact with the application of a little intelligence it is possible to breed quite as perfect specimens from average specimens of the same strain. As Professor Bateson further says: "A knowledge of genetic physiology will only help him (the breeder) here in so far as it may warn him not to pay extravagant prices for animals whose qualities are not genetic or transmissible." That the establishment of the law of dominance is a huge step forward admits of no doubt; that one is able to predict with certainty the difference in result of mating two pairs of mice, rabbits, or sweet peas externally similar in type, markings, etc., through knowing the difference in their genetic constituents, goes further and deeper into the heart of the problem than ever before. Of course having got so far only points the way to the ultimate goal, and directs us along the correct lines we must proceed, and there can be no doubt that the fundamental basis of the study of all the problems of heredity must be the germ-cell, the ovum, the egg itself. In 1866 Haekel said: "We may regard the nucleus of the cell as the principal organ of inheritance." What was then little more than a prophecy is now a well ascertained fact, and only further investigation into the nature and constituents of the fertilised ovum will elucidate the many problems of heredity and inheritance. Much work in this direction has, and is being done, by numerous investigators, more especially in England, America, and the Continent, but an account of it would be outside the scope of this article, which is already longer than originally intended. The fringe only of this huge subject has been touched, such branches as Darwin's Theory of Pangenesis, the Heredity of Disease, Determination and Heredity of Sex, Colour, Transmission of Acquired Characters, Weissmann's Theory of the Germ-plasm, and a hundred and one other aspects must be passed over. But to those who wish to go further than this sketch takes them, the appended short list of works bearing on the subject is recommended, and the writer takes this opportunity of acknowledging his indebtedness for the many excerpts therefrom used in this article.

The list referred to is as follows:

"Mendelism," R. C. Punnet; "Mendel's Principles of Heredity," Professor Bateson; "Heredity," Professor J. Arthur Thomson; "The Principles of Heredity," G. Archdale Reid; "Materials for the Study of Variation," Bateson; "Origin of Species," Darwin; "Variation of Animals and Plants under Domestication," Darwin, Reports I, II, III, and IV to the Evolution Committee of the Royal Society; "The Penicuik Experiments," J. Cossar Ewart; "Experimental Contributions to the Study of Heredity," and "Cross-breeding in Animals," by the same author; "Darwinism," A. R. Wallace, will also give food for thought, and assist.

DISEASES OF ANIMALS ACTS 1894 TO 1910, SUMMARY OF RETURNS.

Period.	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders (including Farcy) Outbreaks	Glanders (including Farcy) Animals.	Counties Affected Animals Attacked	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended April 29	22		28				5	7		3	78	782
Corresponding week in 1910		25		33			10	18	Essex 1	4	22	195
Corresponding week in 1909		31		31			16	32	Kent 1	10	45	308
Corresponding week in 1908		20		22			16	62	London 2	7	43	393
Total for 17 weeks, 1911	343		398		1	18	71	214	Sussex, West 1	287	755	7969
									Wilts 1			
Corresponding period in 1910		522		645			124	312	Lanark 1	301	381	3032
Corresponding period in 1909		485		671			215	339		409	515	4772
Corresponding period in 1908		409		570	3	112	268	932		606	355	2921

Board of Agriculture and Fisheries, May 2, 1911. Parasitic Mange (outbreaks)

IRELAND. Week ended April 29	...	...	...	...	...	...	1	8	1	67
Corresponding Week in 1910 ...	...	...	...	...	1	2	...	14	8	113
Corresponding Week in 1909 ...	...	...	...	...	...	...	2	2	...	23
Corresponding Week in 1908 ...	...	...	...	...	...	...	2	8	14	78
Total for 17 weeks, 1911 ...	3	3	...	...	1	2	37	224	45	799
Corresponding period in 1910 ...	4	6	...	...	1	2	29	291	29	685
Corresponding period in 1909 ...	2	2	...	...	...	...	37	253	10	117
Corresponding period in 1908 ...	3	6	...	...	...	...	19	244	63	1206

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 1, 1911

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

INTESTINAL PAIN.

In *The Lancet* for April 29th is a report of a lecture by Dr. A. F. Hertz, M.A., on "The Sensibility of the Alimentary Canal in Health and Disease." From the latter part of it we quote the following, which must be interesting to veterinary practitioners who see the violent symptoms of pain resulting from the various intestinal disorders of the horse.

"Although as long ago as 1753 Haller had failed to obtain any evidence that the pleura, peritoneum, lungs, liver, spleen, or kidneys of animals were sensitive to pain, it has until recent years been regarded as self-evident that the sensory phenomena of disease could only be explained on the assumption that the viscera were well supplied with nerve fibres, which could convey impulses leading to the sensation of pain. Since the introduction of the method of performing colostomy in two stages, the fact that the manipulation and cutting of the colon during the second stage of the operation, which is performed without an anæsthetic, produced no sensation of any kind first threw doubt upon this view. This doubt was much strengthened by the observations of Lennander and James Mackenzie. Lennander found on numerous occasions during operations, performed on human beings after subcutaneous injection of cocaine without a general anæsthetic, that the normal stomach, small intestine, colon, and appendix could be touched with cold or hot objects, burnt with a caustic, clipped with forceps, or cut with a knife without producing any sensation. The inflamed intestine and the exposed mucous membrane of the cæcum were equally insensitive. The other abdominal viscera and the mesentery and omentum were also insensitive, but the parietal peritoneum and subserous connective tissue were very sensitive to painful stimuli, slightly to excessive heat, but not to cold or pressure. This sensibility was greatly increased even by a slight degree of inflammation. Lennander was therefore led to formulate the theory that all pain in visceral disease results from inflammation of, or traction on, the parietal peritoneum and its subserous connective tissue. The latter is richly supplied with fibres from cerebro-spinal nerves, which can, according to Lennander, convey pain, whilst the viscera themselves are supplied only by the autonomic nervous system, which is not, according to him, able to do so. He believed, for example, that colic is due to the pull exerted by the distended intestine above an obstruction on its mesentery, or where no mesentery is present, on the parietal peritoneum to which it is attached. Subsequently he added as another possible cause of colic the pressure exerted on the anterior abdominal wall by the erection of a coil of intestine in a condition of tetanic contraction, such as occurs above an obstruction.

Observations similar to those of Lennander were made during operations by James Mackenzie, but many of his patients had not even a local anæsthetic. He agreed with Lennander that pain never originates in the viscera themselves, and he showed that the parietal peritoneum, which Lennander had regarded as a very sensitive structure, is really as insensitive as the visceral peritoneum, its apparent sensibility being due to the extremely sensitive subperitoneal tissue. But Mackenzie rejected Lennander's theory in favour of one which he had already suggested nine years before the appearance of Lennander's first paper. He believes that stimuli reaching the central nervous system from diseased viscera cause no sensation themselves, but produce an irritable focus in the spinal cord, with the result that the normal afferent impulses reaching it from the muscles and other tissues supplied by this spinal segment give rise to painful impressions, which are referred to the peripheral tissues.

Although Mackenzie was the first to suggest that all pain in visceral disease is really felt in superficial structures, the idea of referred pain was not new. In the first edition of his "Lectures on Rest and Pain," published in 1863, Hilton discussed the origin of the 'sympathetic pain,' which he described as occurring on the surface of the body in association with derangements of internal and often remotely situated viscera. He suggested that the superficial pain is due to some central connection of the visceral sympathetic nerves with the peripheral sensory nerves, a connection which was subsequently more closely studied by Verdon. The following year a paper was published by Lange, which foreshadowed much of the subsequent work of Ross, Head, and Mackenzie, but as it appeared in Danish it was completely neglected. Lange expressed his belief that the pain which occurs in diseases of internal organs is chiefly reflex, being localised in external parts, where it is often associated with cutaneous hyperæsthesia. He suggested that the afferent impulses from the viscera pass to the spinal cord, from which they radiate along sensory tracts to the abdominal wall, to which the mind projects the sensation. In 1888 Ross investigated the question afresh and came to the conclusion that two forms of pain—splanchnic and somatic—occur in visceral disease. He explained the existence of somatic pain in much the same way that Hilton had explained it under the name of sympathetic pain; impulses produced by irritation of the peripheral terminations of the splanchnic nerves are conducted by the posterior roots to the posterior horns of the spinal cord, where they 'diffuse to the roots of the corresponding somatic nerves and thus cause an associated pain in the territory of distribution of these nerves.' Subsequently Head and James Mackenzie further developed these ideas, and as a result of their investigations the conception of referred pain—the sympathetic pain of Hilton and the somatic pain of Ross—became generally accepted. Head studied particularly the areas of cutaneous hyperalgesia occurring in visceral disease and showed that they are identical with the areas, which receive their sensory nerve fibres from the spinal segments, to which the afferent fibres from the diseased viscera pass. Mackenzie demonstrated that in visceral disease the muscles and parietal subperitoneal tissue supplied by the corresponding spinal segments are tender as well as the skin, and he came to the conclusion already mentioned that all pain in diseases of the abdomen originates in peripheral structures, in contrast to Ross, who believed in splanchnic (or visceral) and somatic (or referred) pain, and to Head, who believes that the viscera are endowed with "deep and protopathic sensibility in a low degree,' but that the chief pain in visceral disease is referred.

The experimental and clinical investigations I am about to describe lead to the conclusion that the view held by Ross is correct, and that disease of the alimentary canal may cause true visceral pain, which is often present alone, but may be associated with pain which is referred to the skin, muscles, and connective tissues connected with the same spinal segments.

In drawing the conclusion that the viscera are insensitive, Lennander and Mackenzie did not take into consideration the fact that a nerve-ending may be sensitive to one form of stimulation—the adequate stimulus—but insensitive to all other. Thus the adequate stimulus for the eye is light, for the ear sound, and so on, although in some cases there may be several varieties of adequate stimulus. All that was proved by Lennander and Mackenzie was that the viscera are insensitive to the particular stimuli which they employed. These stimuli were cutting, pinching, and pricking, none of which occur under natural conditions. It still remained possible that the viscera would be found sensitive were the adequate stimulus employed.

From a consideration of the common causes of visceral pain, it might be expected that tension on the fibres of the muscular coat would prove to be the adequate stimulus, and the observations, which I shall presently record, confirm this view. A certain degree of distension leads to the sensation of fulness if the internal pressure is slowly raised; the same distension rapidly produced leads to the sensation of pain.

Bayliss and Starling showed that stimulation of any part of the intestine leads to contraction above and relaxation below: this reaction they called the "law of the intestine." It is, however, only past of a general law affecting the whole alimentary canal, contraction in one place being always associated with relaxation just below. This is seen most typically at the cardiac, pyloric, ileo-cæcal, and anal sphincters, which normally relax when peristaltic waves coming from above reach them. Meltzer called this law the "law of contrary innervation," and pointed out how it applies to all hollow viscera; he attempted to explain all forms of colic, including the paroxysmal pain produced in pyloric obstruction, to a disturbance in the law of contrary innervation. I believe that his explanation is correct, and I believe, moreover, that other forms of visceral pain, such as the characteristic pain of gastric and duodenal ulcer, are due to the same cause. In colic an abnormally strong peristaltic wave occurs in one part of the alimentary canal; the part immediately below, which would normally relax, is unable to do so owing to organic disease or to spasm due to direct or reflex irritation; the segment between the peristaltic contraction and the point of obstruction becomes more and more distended as it is shortened by the advance of the former; distension being the adequate sensory stimulus, pain is produced.

I believe that tension is the only cause of true visceral pain. Disease in the alimentary canal is often accompanied by pain due to its extension to the parietal peritoneum and sensitive subperitoneal tissue, to drag upon its peritoneal attachments, as suggested by Lennander, and to reference to peripheral structures, in accordance with the views of Hilton, Lange, Ross, Head, and Mackenzie. But it is generally possible to analyse the sensory symptoms in such a manner that the presence of true visceral pain can be recognised at some stage in the disease. In many conditions, such as the common forms of colic, visceral pain is present alone. On the other hand, referred pain, which is a result of the arrival in the spinal cord of impulses from an internal organ, is comparatively rarely present alone, as the impulses from the internal organ generally themselves give rise to visceral pain. Lastly, pain originating in the peritoneum in connection with diseases of the alimentary canal is not uncommon in the absence of visceral pain.

Even when the adequate stimulus is employed the viscera are very much less sensitive than the skin to painful stimulation. This is doubtless due, as Langley has pointed out, to the small number of afferent nerve fibres with which they are supplied, the total number distributed to the whole of the viscera of the cat being about the same as the number present in a single posterior spinal root.

One of the arguments most frequently used by those who do not believe that pain can originate in the viscera themselves is its inaccurate localisation. But seeing that painful stimuli cannot be accurately localised in the skin of such parts as the back of the trunk, it is not surprising that localisation is inaccurate in the viscera, which are supplied with an infinitely smaller number of nerve fibres. According to Mackenzie, the situation of the pain of a gastric ulcer, if produced in the ulcer itself, should move when the stomach is caused to move up and down by deep respiratory movements, but it remains stationary. This argument is fallacious, as the brain learns to locate the seat of sensations according to the average position of the part in which they originate, and it is quite impossible for it to recognise changes in position of the part from the character of the sensation, as the impulses which produce this sensation are identical, wherever the part may happen to be at the moment. Thus I have found that when a moveable area of skin is drawn out of its usual position and some part of it is touched or pinched, the sensation produced is referred to the point in space where the stimulated part would normally be, although, if the skin is unusually elastic, this may be several inches away from its actual position. This is exactly analogous to the interesting observation which Mackenzie regarded as a proof that the viscera are insensitive and that all pain in visceral disease is referred to external tissues; during an operation performed without an anæsthetic the patient felt spasms of pain, which he described as arising near the umbilicus, although they were found to be due to peristaltic waves occurring in a loop of small intestine which had been drawn out of the abdomen and was lying 10 or 12 inches away from the umbilicus.

This "average localisation" of visceral pain explains why it is most accurate in the viscera which move least, such as the gall bladder, œsophagus, duodenum, ascending and descending colon and rectum, least accurate in the very mobile small intestines, and intermediate in the stomach. If an organ becomes dislocated, pain due to disease in it is still felt in the average position and not in the new position. Thus the pain felt in cases of gastric ulcer is in the same situation whether the stomach is in the normal position or has dropped so low that the lesser curvature may be situated below the umbilicus. In a patient with a painful gall-bladder associated with a large liver the pain was felt in the exact situation which the gall-bladder must have occupied before the enlargement of the liver occurred.

Visceral pain often appears to the sufferer to be so deeply situated that it is impossible to believe that it really originates in structures such as the skin and muscles of the abdominal wall, whereas pain produced by disease of these structures feels definitely superficial. Mackenzie answers this argument by pointing out that the pain in herpes zoster may feel as if it were deeply situated, although, being a result of disease of a posterior root ganglion, it must be a referred pain. But Langley has shown that the nerve cells of the afferent sympathetic neurons are situated in the posterior root ganglia, inflammation of which can therefore lead to pain referred to the distribution of the sympathetic as well as to that of the ordinary spinal sensory nerves. The deeply situated pain in herpes zoster is, in fact, analogous to the abdominal pain, which occurs in disease of the spine or meninges involving the posterior roots of the lower dorsal nerves.

The visceral sensations of fulness and pain probably result from excessive stimulation of the afferent nerves, which normally convey the unfelt afferent impulses concerned in various reflexes. Both Foster and Sherrington have pointed out how improbable it is that the viscera should be supplied with pain fibres, which have no other function, for a man may suffer from pain in a particular organ only once in the course of his lifetime. If the pain were conveyed by special nerve fibres it would be difficult to explain how such a special mechanism could have originated, and, when once originated, how it could have been preserved through perhaps several generations, in which it was never used, in order to give rise to a specific sensation on the one occasion in the individual's lifetime on which he was attacked by a painful disease of the organ in question.

It is unlikely that the mucous membrane of the alimentary canal contributes to the sensation of fulness or pain, as it is only stretched when the part is greatly dilated, whereas these sensations are felt in the contracted organ when it is subjected to the adequate

tension. Moreover, Professor Langley tells me that most of the afferent nerve fibres of the intestines end in the muscular coat, medullated fibres being relatively rare in Meissner's plexus, which supplies the mucous membrane and submucous coat. Possibly the stretching of the connective tissue produced by rapid and extreme distension of the stomach or of a part of the intestine gives rise to a sensation of pain ; this would be analogous to the pain which is apparently produced by tension on the connective tissue capsule of the liver, spleen, and kidneys, when these organs undergo a rapid and considerable increase in volume."

Birmingham and District Horse Shoeing Society,—Competitions.

This Society, of which Mr. F. J. Taylor, M.R.C.V.S., is President, and Mr. Brennan DeVine, F.R.C.V.S., Secretary, held its first annual competition open to horse shoers within 20 miles radius of Birmingham at the Corporation Yard, Edward Road, on Saturday 22nd ult. The shoeing commenced at 9 o'clock. Mr. William Hunting, F.R.C.V.S., London, and Mr. W. Hill, A.F.C.L., Devon County Council, were the judges. Both judges were highly qualified for their task, they being the leading experts in England in the horse shoeing line.

Altogether there were 110 entrees, viz., 19 in the hunters' class, 47 in the roadsters' class, and 44 in the cart horse class. The arrangements for the competition were excellent and the stewards carried out their work without the least hitch. According to the judges the work was exceptionally good and well above the ordinary.—*Birmingham News.*

The Hunting Doctor.

Among all the interesting articles which have appeared in *The Hospital* on the recreations of the medical man, the writer does not think there has yet been one upon hunting. Yet the hunting doctor has not become quite extinct, though the motor-car has greatly reduced his numbers. He has his strongholds still, but his habits, where his favourite sport is concerned, are somewhat secretive.

The hunting doctor does not ride down the main street of his town in full hunting panoply if he can help it ; and one may say, in passing, that he never appears in scarlet. For purposes of description he may be divided into two main groups—the hunting country doctor and the secretly sporting town practitioner, generally a consultant.

To take the former first. His sport is often combined with work. On a hunting day he is up betimes seeing his village or country-town patients, who perhaps are somewhat surprised at the early morning zeal of their adviser, though as a rule they have a shrewd idea of the meaning of the phenomenon, and are wont to rally the enthusiast. Profound are his denials if his early visit is due to some other cause !

He bustles through his morning surgery hour, and then dashes upstairs for his grey riding-coat and well-polished boots, brushes his hat, and seizing a pair of dog-skin gloves and a woollen pair to be placed under the saddle-flap in case the day turns to wet, repairs to the stable.

That experienced animal, the hunting country practitioner's horse, is ready awaiting him, well knowing what is afoot. The fact that he has had a double breakfast and is wearing his best bridle and a breastplate have been enough to inform him. The doctor mounts, with a furtive glance up and down the road in case a Job's messenger in the shape of a late-arriving message to go in the wrong direction should come to stop him. All being well, he jogs off. Perhaps he sees a patient or two *en route*. Or he may put his horse into the blacksmith's shop at the village of meeting while he pays some visits near by. In any case he wastes no time "coffee-housing" at the meet. More probably he arrives as the hounds move off or "nicks in" when they have already found their first fox. The doctor often knows his way about the country, for bridle-paths and gaps serve him well on his rounds. As a rule, one good run contents him, and his horse's head is turned for home by 2 p.m. He knows not what messages may await him.

Matters do not always run so smoothly. Not infrequently in the midst of a run an ominous sound of "Doctor, you're wanted" greets his ear. He tries to believe he is mistaken, but is not long left in doubt. He may have to go as much as two miles to the rear before he reaches his patient ; sometimes the accident happens beside him.

Frequently the accident is nothing more than a fall and a shaking, but sometimes it is concussion or a broken limb. But be the accident serious or slight, it generally means the end of the sport for the doctor. If the patient is badly hurt there is first aid to be rendered, means of transportation to be seen to, a motor car, a farmer's trap, or a carriage from the nearest village. The doctor may have to see his patient into the hands of his own medical man.

If no veterinary surgeon be in the field he may have to stitch up horse or hound. In any case, his services are freely given to man or beast, for hunt secretaries are lenient to medical men, and the doctor's services are part of his subscription. It is his part in the commonwealth of hunting.

Finally, he reaches home and is thankful over his tea if he has no journey to perform. But if he has, he often takes his bicycle rather than turn out his companion of the morning, who by now has his head in a hot mash, while the groom put on his bandages. Happy the doctor with a fresh horse in reserve.

The hunting doctor is, we hope, a welcome figure in the hunting field, for men and women like to know that he is there, at the same time devoutly trusting that they will not need his services.

But now for the second, and no less interesting type of hunting medical man, the town practitioner with a taste for the chase. He labours hard in the city, and his waiting room is crowded, but he knows that complete relaxation awaits him. On one day a week he is "not at home," and the butler mysteriously hints that he has important engagements in the country to attend to. So he has.

See him emerge from his house twenty minutes before the 9.15 a.m. leaves for the country. The black silk hat is there and he wears a comprehensive great coat, but looks strangely light about the ankles. He steps quickly into waiting cab, and drives stationwards. As he buys his ticket he looks round to see if any of his patients are in the neighbourhood, and to see that a horse box is attached to the train, then steps quickly into a first-class carriage. A groom touches his forehead and murmurs "All right, sir." The whistle blows, and he is off.

When the train stops to deposit a horse box at Foxington, behold a different man ! He sniffs the good country air and tries to read the sky ; care has left his brow and he means to enjoy himself. He peels off the great coat, and stands revealed in black coat and white cords. Who would recognise the great consultant ?

His weekly holiday has commenced. More power to him ! May he have a good day and no falls ! May he return home in the dusk tired and stiff but happy. May he be clearer of brain and defter of hand for his day's hunting ! And what of his illustrious predecessors, famous alike for their skill and devotion to the chase ? But that is another—and a longer—story.—*The Hospital.*

A New Intestinal Stimulant.

In *The Buffalo Medical Journal* appears an account of a new German organic product which is highly extolled for constipation, intestinal atony, and all forms of deficient peristalsis. Normal peristalsis is stimulated by a specific cellular product which occurs in substantial quantities in the spleen. This is now isolated and marketed under the name of hormonal. It is sterilised, and its activity is tested by animal experiment. Its action is said to be quite different from that of cathartic purges; even constipation of many years' standing is said to be cured for several months by a single dose injected intra-muscularly. The effect is generally noted about the second or third day after administration. In post-operative intestinal paresis and in peritonitis the results are described as equally striking. For these purposes two forms are made: one containing ¼ per cent. of beta-eucaine hydrochloride, for intramuscular injection in chronic constipation; the other without eucaine for intravenous administration in the treatment of intestinal paresis, etc. Not all cases respond favourably to hormonal, but it has not yet been worked out why some patients are comparatively unaffected while others react speedily and completely.

Record of Sports.

The Royal Insurance Company, Ltd., 1, North John Street, Liverpool, send us the eighth edition of their "Record of Sports." This is a compact little volume, of a size handy for the pocket, yet containing 255 pages, all devoted to records and statistics of sports. With the exception of the turf and coursing, almost every branch of sport is dealt with, including such comparatively little practised ones at Badminton, baseball, archery, curling, and punting, with of course many other more widely popular ones. Many of these have been largely amplified for the present edition, which also contains a lengthy series of notable events in connection with the new sport—if sport it may be called—of aviation.

The work will undoubted be both interesting and useful for purposes of reference to all who are interested in sports and pastimes. Any member of our profession who applies to the Royal Insurance Co. for a copy will be supplied so far as the stock will permit.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons desires to acknowledge the receipt of further donation to the College funds, from Mr.

S. H. Nye, London, E.	1	1	0
Amount previously acknowledged	84	0	0
	£85	1	0

Personal.

O'Connor.—On April 21st, at 111 Morehampton Road, Dublin, the wife of Professor J. J. O'Connor, M.R.C.V.S., of a son.

Mr. Tedbar Hopkin, F.R.C.V.S., was re-elected Chairman of Bowdon District Council at the meeting held on Tuesday night. The committees were appointed for the year, and it was resolved that a request be made to the medical practitioners of the district asking if they would notify to the Council any cases of consumption attended by them.

Mr. R. N. Lewis, M.R.C.V.S., for several years resident in Nairn, where he acted as Inspector to the Local Authorities, and at present Veterinary Inspector to Sutherlandshire County Council, has been appointed Veterinary Inspector to the County Council of Dumfries, in accordance with the new scheme of reorganising the public health officials of the county. The salary was £250 per annum, rising to £350. Mr. M'Intosh, the present inspector, will hold office as consulting and relieving inspector at a salary of £65.

We understand that there were over 200 applications for this appointment, and the final selection was from the following candidates who were asked to appear at Dumfries on April 19th: Messrs. J. Brown, F.R.C.V.S., Invergordon; H. Ferrier, M.R.C.V.S., Dundee; W. K. Johnstone, M.R.C.V.S., Manchester; R. N. Lewis, M.R.C.V.S. Golspie; and W. J. Young, M.R.C.V.S., D.V.S.M. (Vict.), Sheffield.

Subject to confirmation by the Sheffield City Council the Sanitary Sub-Committee on April 20th appointed Mr. E. J. Burndred, M.R.C.V.S., D.V.H., Junior Assistant Veterinary Inspector for the City of Sheffield.

At the 76th Annual Show of the Ayrshire Agricultural Association, April 25th and 26th, Mr. Wm. Logan, M.R.C.V.S., of Inverness, was one of the judges of hackney classes. Mr. John Baird, M.R.C.V.S., Dumfries, was awarded seconded in the two-year-old colts for Bold Mathias—"a horse of rare distinction, and a first-rate goer." Mr. John Gray, M.R.C.V.S, Tongue, Tarbolton, was 6th in the class for Clydesdale two-year-old entire colts.—*Scottish Farmer.*

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,
War Office, Whitehall, May 2.

Regular Forces. Army Veterinary Corps.

Lieut. W. I. Macauley to be Capt. Dated March 6.

OBITUARY.

Edward Case, M.R.C.V.S., Fakenham, Norfolk.
Graduated, Lond: April, 1867.

Mr. Case died on March 26th, from cerebral hæmorrhage. Aged 67 years.

William Knight, V.S., Emsworth, Hants.

Death occurred on April 28th, at the age of 67 years, from arterio-sclerosis with cerebral hæmorrhage.

Thomas Simpson, H. & A.S., 1864, died on April 20th, at Stuartfield, Old Deer, Aberdeen, from cancer of rectum. Aged 73 years.

THERMOMETERS.

Sir,

Are we justified in condemning as tuberculous an animal where the temperature has been taken with an ordinary clinical thermometer? I have been giving this matter careful attention for some time, having just completed testing three dozen thermometers procured from six different makers. I find seven only in the lot that will compare with a certificated Kew thermometer; most of them give too high a reading. In face of this I think that in fairness to the animal and to all parties concerned we should only use standard thermometers when testing suspected animals. If the thermometer is false, then the chart must be false, a very undesirable state of affairs on which to condemn an animal, which under a standard instrument might come out with points to its credit. A legal friend has suggested that we are liable if we use a false instrument, seeing that it can be standardised for a few pence.

R. M. Malloch, M.R.C.V.S.
Veterinary Instrument Maker.

Kirkby Stephen, April 26.

Veterinary Societies—Addresses.

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Pres: Mr. William Robb, F.R.C.V.S., Glasgow.
Hon, Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

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Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

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Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. R. W. Paine, F.R.C V.S

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Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

CENTRAL CANADA V.A.
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